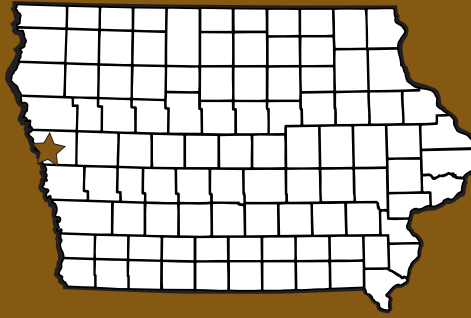




Tom Niewohner
Onawa, Iowa
Corn/Soybeans
1,400 Acres



Strip-Till

Producer Profile



United States Department of Agriculture
Natural Resources Conservation Service

Tom Niewohner has strip-tilled his flat Missouri River bottomland in Monona County since 2002. Drainage, compaction and springtime wind erosion are his biggest issues.

Land/Soil Type

Niewohner farms Luton soils in the Missouri River floodplain. The Luton soil series is formed in clay alluvium, which drains poorly. He says drainage is the number one issue on the river bottoms. "Compaction is related to how well soils drain," he says. "Strip-till helps eliminate compaction."

Strip-till also reduces springtime wind erosion, since erosion would occur more readily with heavy tillage. It also eliminates planting into compacted soils.

End rows on river bottom cropland become heavily compacted over time, so Niewohner does not strip-till those areas. He disks the end rows because strip-tilling in the compacted areas forms mounds that block drainage of water coming off the fields.

Fertility Plan

Fall

Niewohner places dry NPK and micronutrients six to eight inches into the strips directly over the old soybean rows (see right). "I don't use a starter in the spring - the fall application acts as my starter," he says.

Spring

He broadcast sprays 30 pounds of liquid 32% N after planting corn in the spring, and sidedresses another 120-140 pounds of liquid 32% N in late May.

Strips

Niewohner alternates strip locations by 15 inches every two years. He strip-tills between the corn rows in the fall and plants beans on them in the spring. That fall, he strip-tills on top of the old bean rows and applies NPK for the corn he will plant on those strips in the spring. In the fall, he moves over 15 inches and strip-tills between the corn rows, beginning the two-year process over again.

The strips are about four to six inches high in the fall and settle to three to five inches in the spring. After planting, strips are at ground level, or one to two inches above ground. Niewohner estimates he places seed two to three inches above a conventionally-planted seedbed. "If you don't plant into raised strips, then you're actually creating a depression with the planter where water will sit in your rows," he says. "In my type of soil and cold-wet conditions, that is not a good thing."

Equipment

Niewohner uses an Orthman 1tRIPr bar with a 22-inch depth band opening coulter. He uses trash cleaners, a shank with tillage point and closing wavy coulters. Dry fertilizer tubs are attached to the back of the 1" x 4" shank that delivers the product in a vertical area four to eight inches deep.

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"The Orthman setup handles residue very well, plus the 1" x 4" shank is strong enough to break up compaction," says Niewohner. "Also, the depth band opening coulter and parallel linkage row unit keeps the tillage depth at the correct spot for good fertilizer placement."

He uses a Trimble RTK Autopilot system to keep the strips directly on top of the old row.

Economic Benefits

Niewohner saves fuel and time in the spring, because he performs no tillage. "The first trip I make is with the planter," he says. He uses about 800 gallons of fuel in the spring, planting 1,400 acres and spraying. He also side-dresses nitrogen on 700 acres.

Performance/Yields

Niewohner says his yield performance is especially good in years with cold, wet springs. In warm spring seasons where germination is good, his yield performance is similar to non-strip-till systems. "After about the third or fourth year (of strip-tilling), the soil structure changes to where residue breaks down easier," he says. "I attribute that to more earthworm activity, which strip-till promotes."

He says germination rates are very good, so he cut down the planting population on dryland corn acres. Niewohner reports no disease issues with strip-till. "I actually get better root structure and standability with strip-till," he says. "I have less weed pressure early in the season

because of the residue in-between the rows, that keeps the ground cool."

He says strip-till provides the best of both worlds - a warm, dry seedbed to plant on and moisture between rows for later use in the summer.

Challenges

Niewohner says finding the right equipment setup was the biggest challenge when he switched to a strip-till system. His original strip-till bar worked fine in soybean fields, but he had problems with residue in corn stalk fields. He says his Orthman strip-till unit handles corn residue very well.

He also battled corrosion from fertilizer on his original dry cart, and he now uses a stainless steel Valmar dry cart without issue.

Tips

Niewohner says his main management tip is to go into strip-till for at least three years - don't give up after the first year, if things don't go exactly as planned. "What surprised me the most is how you could manage all the corn and soybean residue without doing any full width tillage," he says.

Contact Tom Niewohner

Niewohner is available to answer your questions about strip-till :

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